IDAHO
DEPARTMENT OF FISH & GAME

QUARTERLY COORDINATION REPORT

DINGELL-JOHNSON PROJECTS

December 1975 - 29 February 1976

by

Jerry Mallet
Fishery Research Supervisor

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QUARTERLY COORDINATION REPORT

(1 December 1975 – 29 February 1976)

IDAHO DEPARTMENT OF FISH ND GAME

This quarterly report is intended to satisfy the requirements under project F-67-C-1. The material that has been included was abstracted from the research biologists' annual performance reports and briefly summarizes the work undertaken and results for each of the projects during the year.

F-18-R-21 – STATEWIDE FISHING HARVEST SURVEY

Job 1. Estimates of the 1974 Harvest of Salmon and Steelhead

There was no open season for chinook salmon in Idaho in 1975.

Steelhead fishing in 1975 was limited to catch-and-release only during October and November.

An estimated 591 angles fished 2,182 days and caught and released 922 steelhead.

Job 3. Check Station Surveillance of Major Salmon and Steelhead Fisheries in Idaho

Depressed steelhead runs into the upper Columbia River drainage in 1974 and 1975 led to a first-time experiment with a catch-and-release steelhead fishery in Idaho in October-November, 1975.

Angler interest in this "fish-for-fun" opportunity was low, although catch rates were generally good for those who participated.

From 1970 through 1974, we operated three check stations during each salmon season on the upper Salmon River to provide management with timely and usable chinook salmon catch data.

We used this data to draw both weekly and season harvest estimates of salmon, and to obtain basic angling effort information.

The completion report is a summary of the 5-year program and is a compilation and condensation of data presented in the annual project progress reports of 1970-1974.

F-49-R-14 – SALMON AND STEELHEAD INVESTIGATIONS

Job 1-a. Salmon Spawning Ground Surveys

Each year regional fishery biologists survey major chinook salmon spawning areas in their respective regions to count the number of redds constructed in trend count areas and to obtain age and sex composition data. The data are made available for trend analysis and correlation with dam and weir counts in

management reports.

Redd counts and sex-length data for 1975 were collected and are presented in a series of tables and maps in the performance report.

Job 2-a. Salmon and Steelhead Production and Yield Studies, Lemhi Big Springs Creek

Work on this long term job came to a close on 29 February 1975. The completion report is near completion.

Job 2-b. Salmon and Steelhead Production, Yield and Escapement Studies, Lemhi River

Work on this long term job came to a close on 29 February 1975. The completion report is near completion.

Job 3-a. Evaluation of Pond Rearing Fish Culture Methods

and

Job 3-b. Evaluation of Survival of Pond Reared Chinook Salmon

In late June 1975, we placed 400,000 spring chinook salmon fingerlings, at 154 per kilogram (70/lb), in Decker Flat Rearing Pond. In late September, we released them at an average size of 115 mm fork length and 64/kg (29/lb).

We operated the temporary weir and trap in 1975, and marked and released 37 adult salmon. We later recovered 41% of these fish on spawning ground counts and estimated a total escapement into the upper Salmon River of around 1,200 fish.

Although we inspected over 500 kelts in the pond area, we found no pond-marked kelts in 1975.

An eye fluke infestation diagnosed in 1975 will require control measures in future rearing cycles.

Job 5-a. Evaluation of Survival of Hatchery Reared Salmonids

From June through September during 1973 to 1975, fisheries personnel snorkeled a total of 688 transects on 91 different dates in Lolo, Newsome, Crooked Fork, Papoose, Squaw, Post Office, Moose and Bear creeks, as well as Red, Lochsa and Selway rivers. We also snorkeled 59 transects on 14 different dates in American, South Fork Clearwater, and Middle Fork Clearwater rivers during 1973.

In addition to hatchery releases during these years, escapements of wild steelhead adults above the North Fork Clearwater were 5,114 in 1973, 3,650 in 1974 and 900 in 1975 (Pettit, et al 1976). Chinook returns to the Clearwater were estimated at 3,500 in 1972, 5,000 in 1973 and 1,400 in 1974 (Hoss 1975).

Lolo Creek received hatchery releases of 800 unspawned adult steelhead in 1973, 102,000 smolts and 807 unspawned adults in 1974 and no steelhead in 1975.

Counts of young-of-the-year (YOY) steelhead in Lolo Creek were 40.0 per transect in 1973, 40.9 in 1974, and only 3.5 in 1975. Juvenile steelhead counts were 13.0, 21.3 and 28.3, respectively. Chinook are not present in Lolo Creek.

Newsome Creek received 390,000 steelhead fingerlings in 1973, 100,000 fry and 200 unspawned adults in 1974 and no steelhead in 1975. Counts of YOY steelhead were 19.0 per transect in 1974 and 3.1 in 1975, while those for juvenile steelhead were 95.2 per transect in 1973, 12.1 in 1974 and 12.2 in 1975. Chinook releases in Newsome Creek totaled 33,772 smolts in 1973, 52,920 fry in 1974 and 30,750 fry in 1975. These plants resulted in counts of 2.3, 11.2, and 47.4 juvenile chinook per transect, respectively.

Red River received 325,000 steelhead fingerlings in 1973, 200 unspawned Adults in 1974 and no steelhead in 1975. Counts of YOY steelhead were 11.0 per transect in 1974 in 1974 and 2.4 in 1975, while those for juvenile steelhead were 23.3 in 1973, 13.9 in 1974, and 9.1 in 1975. Chinook releases in Red River totaled 120,160 smolts in 1973, none in 1974 and 59,962 fry in 1975. Counts of juvenile chinook during 1973 to 1975 were 4.4, 15.2 and 44.,4 per transect, respectively.

Crooked Fork Creek received 374,000 steelhead fry and 400 unspawned adults In 1973 and no steelhead in 1974 or 1975. Counts of YOY steelhead were 8.5 in 1974 and only 1.8 in 1975, while those for juvenile steelhead were 18.9 in 1973, 9.0 in 1974, and 14.1 in 1975. Steelhead counts in other Lochsa River tributarries followed these same trends. No hatchery chinook have been released in Crooked Fork during 1973 to 1975, and counts have declined each year from 46.1 per transect in 973 to 22.2 in 1974 and 19.6 in 1975.

Moose and Bear creeks in the Selway drainage have never received hatchery-reared steelhead or chinook. Counts of YOY steelhead in Moose Creek were 24.8 per transect in 1974 and 20.1 in 1975, while those for juvenile steelhead were 22.0 and 21.0. In Bear Creek, YOY steelhead numbered 29.5 per transect in 1974 and 35.0 in 1974, while juveniles were 20.0 per transect in 1973, 27.0 in 1974 and 18.0 in 1975. Juvenile chinook counts were 67.2 per transect in 1974 and 56.2 in 1975 in Moose Creek, with Bear Creek at 154.0 per transect in 1973, 200.0 in 1974, and 100.0 in 1975.

F-53-R-11 - - LAKE AND RESERVOIR INVESTIGATIONS

Job 2-a. Squawfish Control in Cascade Reservoir

The chemical squoxin is in its final stages of registration and its use during the summer of 1975 was not allowed. Consequently, Job II-a could not be undertaken during the project year.

Job 2-b. Distribution, Survival and Growth of Game Fish in Cascade Reservoir

Between 29 May and 1 September 1975, anglers at Cascade Reservoir fished an estimated 158,422 hours and caught 11,410 rainbow trout, 15,207 coho salmon, 37 kokanee, 268,098 yellow perch, 20,672 bullhead catfish, and 16,735 squawfish. The kokanee and squawfish catches were down 79% and 5% respectively from a

comparable period in 1974 while the yellow perch, rainbow, coho and steelhead catches were up 34%, 17% , 57% and 20% respectively.

Boat anglers fished 82,124 hours during the 1975 study period and caught 178,213 fish of which 4.3% were rainbow trout, .02% kokanee, 5.3% coho, 79.1% yellow perch, 5.1% bullhead catfish and 6.0% squawfish. Bank anglers fished 76,298 hours and caught 3,775 rainbow trout, 5,715 coho, 127,154 yellow perch, 11,501 bullhead catfish and 6,096 squawfish. Boat angler pressure increased 13% over a comparable period during 1974 and bank angling pressure increased 31%.

Horizontal gill nets fished 41 hours during late August, 1974 and caught 204 fish. Squawfish made up 38% of the catch, coarse-scaled suckers 19%, perch 7%, bullhead catfish 31%, rainbow trout 1% and coho salmon 4%.

Dissolved oxygen levels were in the 3-4 ppm range in the reservoir bottom by mid-July.

Job 3-c. Evaluation of Fish Populations in Anderson Ranch Reservoir

The creel census at Anderson Ranch Reservoir in 1975 yielded estimates of 51,947 total hours fished by all anglers to harvest 42,175 fish. Boat anglers fished 46,041 hours and harvested 36,865 kokanee, 232 rainbow trout, 1,725 squawfish, 297 yellow perch, 90 smallmouth bass, and 11 Dolly Varden. Bank anglers fished 5,906 hours to harvest 556 rainbow trout, 1,728 squawfish, 282 yellow perch, 349 smallmouth bass, and 40 Dolly Varden. Boat angling pressure was up over that of 1974 while bank angling pressure dropped by almost 50%.

Gill net sampling in the reservoir indicates that growth rates for Age Class I and Age Class II kokanee are comparable with those of 1974.

The catch rate on squawfish for boat anglers stayed approximately the same as the 1974 rate while the bank angler catch rate dropped by .2 fish per hour. Gill net sets in September indicated no significant difference in the squawfish population.

Job 3-d. Experimental Introduction of Smallmouth Bass into Anderson Ranch Reservoir

Department personnel planted 850 adult and sub-adult smallmouth bass and 70,000 fry smallmouth bass in Anderson Ranch Reservoir in 1975. The adult and sub-adult bass ranged in size from 152-432 mm (6-7 in).

There was good evidence of bass spawning in the lower tributaries (Falls Creek to the dam) of the reservoir in July with fry seen in good numbers in this area. Algae blooms hampered underwater vision in the upper areas of the reservoir.

Anglers harvested an estimated 439 smallmouth bass at Anderson Ranch Reservoir during the 1975 census period.

Job 4-a. Lake Pend Oreille Creel Census

In 1975, sport anglers fished an estimated 262,605 hours during 58,323

man-days to catch 446,066 fish between 13 January and 30 November at Lake Pend Oreille. Kokanee and trout comprised 98% and 1% of the estimated catch, respectively.

Anglers seeking kokanee fished an estimated 200,881 hours during 47,004 man-days to catch 438,382 kokanee averaging 2.1 fish per hour. An increase in effort resulted in the highest angler man-day pressure recorded in 17 years between 1 June and 30 November 1975. The resulting catch, best since 1970, remained nearly 81,000 kokanee below the 17-year average.

Anglers seeking trophy Kamloops trout over 432 mm (17 in), fished an estimated 55,712 hours during 10,993 man-days to catch 759 trophy Kamloops and averaged 72.2 hours per trophy fish. In addition, anglers seeking other salmonid species caught 342 trophy Kamloops. The trophy Kamloops harvest in 1975 (1,101) equaled the catch taken in 1970 which is the highest recorded take since 1965.

Hatchery personnel have released 658,204 Kamloops trout since 1968. To date an estimated 433 of 502,835 clipped fish have been caught. Census personnel have found only two clipped returnees of 1,086 trophy Kamloops observed during the past 5 years.

In 1975, Clark Fork River anglers fished an estimated 2,312 hours during 426 man-days to catch 66 trophy Kamloops and 12 Dolly Varden. Estimates show an equal harvest of trophy Kamloops over 9.1 kg (20 lb) in the Clark Fork River (24) and in Lake Pend Oreille (23). However, it took 1.1 days of river fishing to catch a Kamloops 9.1 kg (20 lb) or larger as opposed to 9.2 days on the lake. Success rates have remained above the long term average for both fisheries.

Dock-side interviews and a telephone survey, in 1975, canvassed sportsmen's attitudes on critical questions regarding fish and game management. An important issue concerned whether sportsmen favored or opposed commercial fishing for kokanee at Lake Pend Oreille. Sixty-nine percent of the dock-size respondents would not support a commercial fishery, even if future research indicated a surplus of kokanee sufficient to support such a fishery. Meanwhile, 54% of the telephone respondents opposed a commercial fishery while 28 favored it. In addition, kokanee anglers interviewed at dock-side expressed satisfaction with present daily bag and possession limits of kokanee at Lake Pend Oreille.

Job 4-c. Kokanee Spawning Trends

Spawning escapement from both early and late-run kokanee were assessed in Pend Oreille Lake and its tributaries during the 1975-76 spawning season.

Early-run kokanee began spawning in Trestle Creek 28 August 1975 and continued through 5 October when most spawning activity terminated. Trestle Creek supported more kokanee in 1975 (maximum single count – 14,555) than in either 1974 (maximum single count – 217), 1973 (maximum single count – 1,076), or 1972 (maximum single count – 5,000).

About equal numbers of late spawning kokanee were observed spawning in the tributaries and on the shorelines of Pend Oreille Lake during the 1975-76 and 1974-75 spawning seasons. All shoreline spawning in the lake in 1975 was observed in Bayview. Spawning commenced in Bayview 15 November 1975 and peaked 14 December with 9,231 kokanee counted. Granite Creek supported

the largest run of tributary kokanee spawners during the 1975-76 spawning season with a maximum single count of 26,453 kokanee counted 1 December 1975. A total of 14,198 kokanee were counted through the Sullivan Springs Creek weir.

Overall, by comparing maximum single counts of late-run kokanee taken in the spawning years 1972 through 1975, there were about equal numbers of spawners counted in 1973, 1974 and 1975 but there was about a 3 to 1 increase from those years over the number of spawners observed in 1972.

Age at maturity of kokanee varied from spawning area to spawning area in Pend Oreille Lake during the 1974-75 and 1975-76 spawning seasons. In 1974 and 1975, the sample taken from the Bayview area was predominantly age 4+ kokanee of both sexes while those same years the Granite Creek sample consisted mostly of age 3+ fish.

Job 4-d. Lake Pend Oreille Limnological Studies

The limnology of Pend Oreille Lake, a large, deep lake in northern Idaho, was studied during 1974 and 1975 to describe important environmental factors affecting the kokanee salmon, Oncorhynchus nerka (Walbaum). Data were collected on physical and chemical parameters, plankton standing crop, and primary productivity. Special emphasis was placed on the macro-zooplankton community. Data were compared with those of 1923, 1953 and 1958 to delimit any long-term changes in the system.

Pend Oreille Lake is temperate and dimictic. It is a moderately rich system and appears to be primarily phosphate-limited. The great depth of the lake, mean depth 164 m (538 ft) is important in maintaining its oligotrophic nature. Comparison with earlier studies shows no significant changes have occurred in the trophic status of the lake.

The location of the Clark Fork River and its influence on the relative flushing rates and turbidity throughout the lake was an important factor in plankton distribution. As a result, primary production and plankton standing crops were substantially reduced in the north end of the lake where flushing and turbidity were greatest.

Bosmina longirostris appeared as an important member of the limnetic zooplankton between 1923 and 1953, probably as a result of the establishment of the kokanee population during the same period. Selective predations upon Daphnia by kokanee may have reduced its competition with Bosmina. An increase in the relative abundance of Daphnia and decline in Bosmina accompanied by an apparent decline in the kokanee population between 1953 and 1974 support that contention and represent an example of the size-efficiency hypothesis.

Mysis relicta was introduced to Pend Oreille in 1966. A large increase in its population in 1975 had a major impact on the lake system. An increase in the Mysis biomass probably accelerated phosphorous regeneration and indirectly stimulated primary production. Selective grazing by Mysis may have promoted a shift in the phytoplankton composition to a dominance of Asterionella. Daphnia thorata had a severely depressed abundance during 1975 and Bosmina longirostris was delayed in seasonal appearance, probably as a result of competition with Mysis. Kokanee appear to be inefficient in utilization of Mysis. The net impact may be a reduction in the available kokanee food supply

Job 4-e. Lake Pend Oreille Kokanee Life History Studies

During 1975 we made monthly echosounding estimates on Pend Oreille Lake to assess fish abundance and movement. Vertical gill nets were used to determine fish species and age class composition of kokanee in the lake. We collected stomachs from angler-caught kokanee to assess kokanee food habits. A small trawl was used to evaluate the densities and distribution of Mysis relicta in the lake.

We improved the accuracy of the 1974 and 1975 echosounding fish estimates by applying correction factors to the estimates which we obtained from comparing our echogram counting system to a calibrated echosounding system. The 1975 peak estimate showed a marked decline from 12.1 million fish in 1974 to 9.2 million in 1975. With the exception of a general northward movement of fish occurring in early spring in Pend Oreille Lake specific fish distribution and movement patterns were difficult to assess suggesting continual movement most of the year.

Gill netting from June through September yielded 96.7% kokanee of the total fish collected. As found during 1974, most of the age 1+ kokanee were collected on the north end of the lake in 1975. By back calculating fish length at each annulus from scale analysis, we found that most of the kokanee growth occurred during their first year of life.

We noted a major shift in the kokanee diet from 1974 to 1975 in Pend Oreille Lake. There was a major shift from Daphnia as the primary summer forage in 1974 to Epischura in 1975. The food habit data related to a significant reduction in Daphnia abundance in the lake from 1974 to 1975.

Mysis relicta densities in Pend Oreille Lake increased dramatically (10 fold) from 1974 to 1975. Stomachs collected in 1975 revealed the first evidence of shrimp utilization by kokanee in the lake. With the evidence of older age (5 and 6) kokanee in the lake population an increased utilization of shrimp by kokanee can be anticipated.

Job 11-a. Coeur d'Alene Lake Fisheries Investigations

We conducted a periodic creel census on Coeur d'Alene Lake during the spring and fall of 1975. Kokanee were the preferred fish sought by anglers in 1975. The kokanee catch rate for the two periods covered was higher in 1975 (1.86 fish per hour) than in 1974 (1.16 fish per hour). The catch of trout in the lake remained insignificant. Ten of eighteen tributaries surveyed were being used by adfluvial cutthroat spawners.

The contribution of early spawning kokanee remained questionable. No early kokanee were identified in the creel in September and no spawning runs occurred in the four tributaries that received fry plants in 1972.

Sample trawling failed to produce any Mysis relicta and it is doubtful that they are present in Coeur d'Alene Lake.

Job 13-a. Palisades Reservoir Fisheries Investigations

An estimated 9,600 trout weighing 6,794 kg (14,978 lb) were harvested in

16,500 angler days (about 68,000 hours of angling) at Palisades Reservoir during 1975. An average of 7 hours was required to land a trout. Multiple-gear restrictions resulted in a lower catch rate for shoreline anglers and trollers than for the normally slower ice fishing.

Cutthroat made up 84% of the trout taken by anglers compared to only 28% in gill net sampling. Of the trout caught in the experimental gill nets, 84% were brown trout; this species made up 15% of the angler catch. Angler catch of planted cutthroat and lake trout (stocked as fingerlings) was less than 1%. Creeled brown trout averaged 427 mm (16.8 in) in length compared to 385 mm (!5.3 in) for cutthroat and lake trout. The majority of trout were infested by the nematode parasite, Philomena; however, incidence was several times greater in the plankton-feeding cutthroat than in the predominately piscivorous brown and lake trout.

Job 14-a. Henrys Lake Fisheries Investigations

Comparisons of the fishery at Henrys Lake during 1975 with that which existed some 24 years ago indicate the following changes have occurred:

1. Angling pressure has increased 284% and harvest of trout 114% in numbers and 47% in weight.

2. The average weight of trout has declined from 1.2-0.9 kg (2.75 to 1.9) lb), the apparent reason being a more intensive fishery that takes younger fish.

3. The average rate of catch has declined from 0.66 to 0.35 trout per hour.

An estimated 29,914 trout weighing 56,545 lb were harvested during 1975 at Henrys Lake in 21,992 angler days (86,304 hours). Effort, number and weight of trout caught, average size of trout, and success rate were up in 1975 compared to 1972, the last census year. However, brook trout declined 5% in number and 20% in weight. Fishing effort continued roughly equal by resident and nonresident anglers.

Job 15-a. Little Camas Reservoir Fisheries Investigations

To evaluate the rainbow trout fishery at Little Camas Reservoir, we used marked hatchery releases and random angler counts and interviews to estimate the fishing pressure, catch rate, contribution to the fishery by hatchery trout, trout growth, angler composition and angler opinion. We also used gill nets to capture some trout for stomach sample analysis and sampled the zooplankton population.

From 26 April to 30 November 1975 (the ice free period), we estimated that all anglers using Little Camas fished a total of 68,442 hours to harvest 20,098 rainbow trout. Bank anglers accounted for 81.1% of the effort and harvested 75.5% of the trout. Peak angling pressure occurred in September and early October and coincided with the time of maximum catch rate (about 0.46 trout/hour). Average catch rate for all fishermen over the entire census period was 0.29 trout/hour.

The harvest at Little Camas consisted entirely of rainbow trout. We estimated that 6.7% of the 1974 harvest was provided by wild rainbow, 49.1% by hatchery releases made prior to 1975, 26.2% by marked fingerlings released in 1975 and 18% by jaw-tagged hatchery catchables released in 1975. The rate of return to the creel for the hatchery catchables and fingerlings released in 1975 were 40 and 7%, respectively.

Zooplankton samples from Little Camas indicated that Daphnia, Cyclops, and Diaptomus were the predominant genera present. A peak in Daphnia, Cyclops and total zooplankton abundance occurred in mid-June. The Diaptomus population was highest in August.

During June, Daphnia made up about 80% by volume of the stomach contents found in trout under 280 mm and 19% of that found in trout of larger size. In July, aquatic insects and snails were the predominant food found.

Back calculation of wild trout growth (using a linear regression), indicated that the trout averaged 85 mm in total length at the first annulus, 184 mm at the second and 317 mm at the third. The average total length of four, age 3+ trout taken 24 November was 385 mm.

Growth of hatchery released trout was good to excellent throughout the census period. Fingerlings released at an average length of 93 mm in May were entering the catch in November at an average length of 271 mm. Hatchery catchables released at an average length of 222 mm in May entered the November harvest at an average of 322 mm and those released in June at an average of 229 mm entered the November catch with an average length of 300 mm.

Analysis of angler license checks indicated that senior license class holders comprised over 20% of the anglers present at Little Camas during 1975. Over the entire season 36% of the anglers interviewed felt fishing was good, 28% felt it was only fair and 36% expressed the opinion that fishing was poor. When asked how to improve the fishery, 35% did not have any suggestions, 23% recommended planting more and 29% were for more restrictive regulations.

Job 16-a. Roseworth Reservoir Fisheries Investigations

We used random angler counts and interviews to survey angler use and harvest, and gill nets and electrofishing equipment to assess fish species distribution and relative abundance in Roseworth Reservoir.

Anglers fished Roseworth an estimated 63,965 hours in 1975 and harvested 30,958 rainbow trout and 27 cutthroat trout. Ice fishermen expended 1,645 hours during January and February and harvested 4% of the total rainbow catch. Boat anglers accounted for 14% of the angler effort of 62,318 hours during the general season from 24 May to 30 November. Bank anglers harvested 81% of the 29,228 raingow trout caught during the general season.

Catch rates for rainbow trout during the ice fishery were 1.05 fish per hour in January and .42 in February. Bank angler catch rates during the general season were highest after 16 August when they averaged .44 fish per hour per interval until the season closure. Boat angler catch rates were highest from 13 September until the closure averaging 1.22 fish per hour per interval.

From expansion of catch rates, we estimate a harvest of 2,798 catchable rainbow (37.8% of catchables tagged and planted) planted in 1975. An estimated 790 rainbow (1%) of the fish planted as fingerlings in April-May 1975 were harvested. These fish began entering the angler's creel in August and September and averaged 247 mm (9.7 in) total length. Twenty-one rainbow trout (0.07%) of the group planted as fry-fingerlings on 20 August 1975 were harvested by anglers. These trout averaged 143 mm (5.6 in) in November.

Eighty-one percent of anglers interviewed at Roseworth were between 21 and 65 years old. About 95% reside in Twin Falls County or other Magic Valley counties within 161 km (100 mi) of Roseworth Reservoir. Forty-nine percent of the anglers rated fishing good and 51% expressed some dissatisfaction and rated fishing fair or poor. Of the suggestions voiced to improve fishing, 85% listed increased fish planting and 15% suggested more restrictive regulations.

Rainbow, brook and cutthroat trout and kokanee salmon comprised 16.8% of our total gill net and electro-fish samples. Rainbow trout composed 98% of the game fish catch. Redside shiners were the most abundant fish in our sample; however, the sucker species contributed the greatest biomass of the nongame fish species. All major species, both game and nongame fish, were captured at our three sample sites.

Rainbow trout stomach analysis indicate they prefer Daphnia followed by Chironomidae. Daphnia averaged 10.6 per liter from the reservoir surface to the bottom at three plankton sampling stations from 12 May to 4 November.

Job 17-a. Salmon Falls Creek Reservoir Fisheries Investigations

Anglers fished an estimated 97,123 hours to catch 22,417 rainbow trout, 53,589 yellow perch and 2,262 other fish from Salmon Falls Creek Reservoir between 7 April and 30 November 1975.

Most anglers reside within 161 km (100 mi) of the reservoir and prefer trout fishing with bait. Seventy-six percent of the anglers responding were satisfied with present access conditions.

We electrofished at night and set gill nets to assess relative fish abundance and distribution. Rainbow trout and yellow perch, the most common game fish species sampled, comprised 5.2% and 25.7% of all fish collected. Kokanee salmon and walleye, the two major target species of the study, totaled less than 1% of the fish collected. Nongame species totaled 66%.

Zooplankton sampling revealed an average Daphnia density of 9.3 per liter And copepod (Diaptomus and Cyclops) density of 9.2 per liter at three stations From 8 May to 6 November 1975.

We jaw tagged 12,300 catchable-size rainbow trout and fin clipped 28,600 fingerling rainbow trout that were planted in 1975 in order to determine growth and survival. We estimate a harvest of 16.4% of the tagged rainbow from 7 April to 30 November 1975. The mean total length increase of recaptured fin clipped rainbow 2.5 months after release was 64 mm (2.5 in) or 26 mm (1 in) per month.

F-59-R-7 -- EVALUATION OF ANGLING REGULATIONS IN MANAGEMENT OF CUTTHROAT TROUT

Work on this job came to a close on 29 February 1976. The annual performance report is near completion.

F-60-R-7 - - ST. JOE RIVER CUTTHROAT TROUT AND SQUAWFISH INVESTIGATIONS

Job 1. Life history of St. Joe River Cutthroat Trout

Job 2. Squawfish Studies - - St. Joe River

Job 3. Evaluation of Squawfish Control Program and Survival of Hatchery Releases

In 1975, we conducted a creel census on the lower St. Joe River from Falls Creek to Avery. An informal interview census was also conducted below Falls Creek. The systematic census included estimates of pressure and harvest for game fish, plus angler interviews and data on squawfish catches. From 31 May to 22 August, anglers fished an estimated 5,336 hours and caught 3,779 fish, including 1,617 wild cutthroat, 854 wild rainbow, 363 hatchery rainbow, 291 Henrys Lake cutthroat, 258 whitefish, 168 Dolly Varden, 155 rainbow-cutthroat hybrids, 21 brook trout, 19 hatchery rainbow that were released as fingerling, 18 kokanee, and 15 pond-reared North Idaho cutthroat. Henrys Lake cutthroat provided 7.7% of the fishery on the lower river. The return to creel wsa 0.7% of the estimated release.

Fishing pressure and game fish harvest were approximately three times less than for 1973, primarily due to high water in June and poor weather conditions on weekends. Reduced availability of hatchery rainbow trout during the census and increased prices for fishing licenses probably had additional suppressing effects. The overall catch rate of 0.7 game fish per hour was approximately the same as that of previous years. However, the total catch consisted of a higher percentage of wild fish probably due to delayed releases of hatchery rainbow during the census period.

Angler interviews showed that a majority of anglers fishing the lower river agree with regulations on the upper St. Joe River. Considerable sentiment exists for more intensive management of native cutthroat on the lower St. Joe River. Among the interviewed anglers, there was no case in which a rainbow was mistaken for a cutthroat or vice versa.

F-63-R-5 - - SNAKE RIVER FISHERIES INVESTIGATIONS

Job 3-a. Survey of Angler Use and Harvest in the Snake River from the C.J. Strike Flowline Upstream to Bliss Dam

We conducted an extensive survey of recreational use and fish and game harvest in 99.1 km (61.6 mi) of the Snake River during the 7 April 1975 to 11 January 1976 study period. We also evaluated access to this river expanse from Loveridge Bridge to Lower Salmon Falls Dam.

Anglers expended a total of 14,465 hours in the survey area. The Bliss Dam to Lower Salmon Falls Dam section received the greatest fishermen use (35.5%) of the four study sections. Anglers harvested 3,741 game fish or a

total of 10,951 fish. Channel catfish was the most abundant game fish harvested from Loveridge Bridge to Indian Cover Bridge (Section I). Smallmouth bass were harvested in greatest abundance from Indian Cove Bridge to canyon house, upstream from King Hill (Section II). White sturgeon and rainbow trout comprised the total game fish catch from canyon house to Bliss Dam (Section III). Anglers caught predominately rainbow trout from Bliss Dam to Lower Salmon Falls Dam (Section IV), principally within 3 miles downstream from Salmon Falls Dam.

Captured sturgeon ranged from 22.9 to 266.7 cm (9 to 105 in) in length indicating a viable reproducing population in that river section. Anglers captured sturgeon from Loveridge Bridge to Bliss Dam.

Hunters expended 7,844 total hours in the study area and harvested 2,822 waterfowl. Section I received the heaviest hunter use (67.7%) of the four sections and contributed 62.5% of the waterfowl harvested. Mallards comprised 55.1% of the total harvest, widgeon 11.8%, green-winged teal 8.7% and geese 1.4%. Other waterfowl harvested were pintail, wood duck, redhead, gadwall, canvasback, etc.

"Other" recreationists expended 23,708 total hours. Greatest use was from 5 May to 25 August 1975. Section II received 64.3% of the "other" use. This included picnicers, swimmers, artifact hunters, campers, horseback riders and sightseers.

Access to the river by public and private land is adequate. However, boat launching facilities are sparse, which may help to insure the isolation of some islands for goose nesting and wildlife habitat.

F-66-R-1 - - RIVER AND STREAM INVESTIGATIONS

Job 1. Moyie River Fisheries Investigations

During the summer of 1975, we conducted a study on the Myoie River from The U.S.-Canadian border at Eastport, Idaho to the dam at Moyie Springs. From 27 June to 30 August, anglers fished an estimated 5,144 hours and caught 4,650 trout including 4,368 rainbow (3,878 hatchery catchables, 490 wild rainbow), 216 brook trout, and 66 other game fish (cutthroat and rainbow-cutthroat hybrids). During the study period, overall angler success was 1.03 fish per hour.

Representative snorkeling transects were selected at nine locations on the river. Observations were made in these transects in early August using mask and snorkel. An average of 31 game fish per transect were counted. The composition of the count was 35.9% wild rainbow, 43.4% hatchery rainbow, 1.1% brook trout, .35% cutthroat, and 19.9 whitefish. No attempt was made to count nongame species (suckers, dace, shiners, and sculpins), but they occurred in all transects.

We electrofished Round Prairie Creek (a major tributary) because of its accessibility to river-run fish. We collected nine species of fish and 184 individuals (50 brook trout, 3 wild rainbow, 1 cutthroat, 3 whitefish, 7 suckers, 80 dace, 9 shiners, 16 sculpins, and 7 Northern chubs). We tagged 10 brook trout for possible recovery from the Moyie River.

Job 2. Selway River Fisheries Investigations

From 28 July to 1 August 1975, fisheries personnel snorkeled a total of 28 transects in the Selway River from White Cap Creek to Race Creek and counted a total of 161 cutthroat trout for an average of 5.8 cutthroat per transect. Comparatively, we counted 4.4 cutthroat per transect in this section in 1973 and 5.5 in 1974. Percent of cutthroat over 305 mm (12 in) decreased from 18.1 in 1973 to 10.4% in 1974, and increased slightly to 13.0% in 1975. Numbers of cutthroat per transect have increased each year in Bear Creek (1.0 to 3.8 to 4.2). In the lower Selway (roaded section) we have seen 0.05, 0.4 and 0.2 cutthroat per transect in 1973, 1974 and 1975, respectively.

Department personnel operated a check station at the mouth of Moose Creek on weekends from 21 June to 10 August 1975, and checked 111 anglers who had fished 660 hours for 595 steelhead-rainbow, 228 cutthroat, 4 Dolly Varden and 23 whitefish. Anglers released 36% of the cutthroat and 82% of the steelhead-rainbow which they caught. Seventy-one percent of the anglers interviewed were nonresidents.

We measured a total of 328 cutthroat in the Selway River from Moose Creek during 1975. The mean total length of these fish was 238 mm (9.4 in) with a range from 110 to 402 mm (4.3-15.8 in).

We tagged 233 cutthroat in the Selway River and 28 in Moose Creek during 1975. To date, we have received only 14 tag returns. The largest migration was a 16.1 km (10 mi) upstream movement from 1.2 km (0.75 mi) below Moose Creek to 1.6 km (1.0 mi) below Bear Creek in 27 days.

Job 3. Silver Creek Fisheries Investigations

Silver Creek has been a stream of national renown for many years. Because of the importance of Silver Creek as a trout fishery, an intensive fishery investigation has been programmed. During 1975 a limited effort was made to collect information that will assist in preparation for more intensive studies to be conducted in 1976 and 1977.

Fishing in Silver Creek during 1975 was relatively good as indicated by catch rates from 0.8 to 2.6 in various stream sections. Over half (59%) of the anglers listed fishing as good and only 6% listed it as poor.

Anglers kept fewer trout (9%) in section I (“fly-only”) and anglers fishing section 3 (“hatchery rainbows”) kept most fish (97%).

Approximately 93% of the anglers interviewed did not favor the use of boats for fishing on Silver Creek. About 84% did not favor the use of float tubes in the “fly-fishing-only” section of Silver Creek.

The 14-in regulation on Silver Creek and tributaries was satisfactory to 88% of the anglers.

Forty percent of the anglers on Silver Creek fished with flies, 13% with lures and 47% with bait. However, bait was used by over 50% of the anglers utilizing those stream sections where they had a choice.

Idaho residents composed 55% of the anglers interviewed on Silver Creek during 1975. Nonresident anglers were in the majority only in areas in which hatchery catchable rainbows were stocked.

F-67-C-1 - - FISHERY RESEARCH SUPERVISION

The Fishery Research Supervisor spent the last quarter supervising the eight Dingell-Johnson projects with their 31 separate jobs. Considerable time was spent preparing annual performance reports for printing. Field program planning and supervision also required considerable time.